

REMARKS

Applicant acknowledges the Examiner's indication that claims 1-10 are allowed. To move the application more quickly to allowance, the Applicant has cancelled claims 11-14.

The Applicant has presented new claim 15 for the Examiner's consideration. New claim 15 is a broader form of claim 1. This claim is believed to be in condition for allowance because it includes the novel feature, found in claim 1, that the liquid chamber is movable within the pump body and biased toward the head so that the head evacuates the liquid chamber and still is free to continue the pumping stroke by compressing the spring supporting the liquid chamber causing the pump to discharge air from the nozzle. This design is distinguished from the applied patents in that the liquid chambers in these designs are fixed. In using a fixed liquid chamber, the applied patents are necessarily more complex to achieve air discharge. For example, Graf relies on the sequential opening and closing of multiple valves associated with the liquid and air chambers to discharge air at the end of its stroke. Meshberg uses a separate diaphragm pump to discharge air at the end of the stroke. (Col. 9, lines 44-58). Consequently, Meshberg requires an additional pumping stroke (depressing the diaphragm) to discharge air at the end of the main pump stroke. The Applicant's invention improves on Meshberg by providing a system that only requires a single pumping stroke. Also, by making the liquid chamber moveable and providing a spring that allows further movement of the liquid chamber after it has been evacuated, the Applicant avoids the need for Graf's complex valve system. In the invention of claim 15, a cup, which defines the liquid chamber, is movable within the pump body and biased toward the head by a spring. During a pump stroke, the head first drives the liquid from the liquid chamber before compressing the spring. Since the liquid chamber has been evacuated during the first portion of the stroke, as the spring is compressed, only air is driven from the air chamber. Since this movable liquid chamber is not disclosed nor obvious from the applied patents, the Applicant believes that claim 15 is allowable over the applied patent.

Overall, claims 1-10 and 15 are believed to be in condition for allowance and the Applicant respectfully requests notice of the same.

Should the Examiner wish to discuss any of the foregoing in more detail, the undersigned attorney would welcome a telephone call.

Although the Applicant has added new independent claim 15, the cancellation of claims 11-14 has offset any additional fees that would have been associated with the addition of this claim. Nonetheless, in the event that a fee is required for the filing of this document, the undersigned attorney hereby authorizes the Commissioner to charge payment of any fees associated with this communication to Deposit Account No. 18-0987.

Respectfully submitted,



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